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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CHACKO, JOE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,512	JAYAWARDENA ET AL.	
	Examiner	Art Unit	
	JOE CHACKO	2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the amendments filed on 5/4/2008. Claims 1-8, 10-19 are pending. Claims 1 and 15 have been amended.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/4/2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 8 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 3, 5-8, 11-15, 17, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Talpade et al. (U.S. Patent Pub. No. 2004/0148520 AI) in view of Stone et al. (U.S. Patent No. 7,062,782 B1)

As to **claim 1**, Talpade et al. discloses network comprising of: a plurality of edge routers (fig.2 , 226,228) a plurality of core routers (fig.2, 202,where core routers are parts of the ISP network, page 2, [0016]) adapted to allow communication between said plurality of edge routers; a VPN application (fig.2 , 232, analysis engine)in communication with a first one of said plurality of edge routers(, pg.2 , [0017], where the analysis engine is connected to the border router and edge router), said VPN application having a first IP address; and a discloses a black-hole router ("filter router" , fig.2 , 230) in communication with said core routers,

Talpade does not explicitly disclose the black-hole routers injecting a second IP address into the ISP VPN network and said second IP address comprising: the same address as the first IP address, a higher preference value than said first IP address and a community value such that when said second IP address is injected, a selected first number of edge routers direct VPN traffic addressed for said first IP address to said VPN application and a selected second number of edge routers direct VPN traffic addressed for said first IP address to said black-hole router

In an analogous art, Stone et al. discloses a black-hole router (fig.3, 301, tracking router) in communication with said plurality of core routers, said black-hole router adapted to inject a second IP address(column 8, lines 42-45; tracking routers announce routes) into said ISP VPN network, said second IP address comprising: the same **IP** address as the first IP address (column 8, lines 65-column 9, line 4; static route has the destination of the edge router closest to the victim), a higher preference value than said first IP address (column 9 ,lines 5-10; the static route takes precedence over the route from the route from the tracking network); and a community value such that when said second IP address is injected , a selected first number of edge routers direct VPN traffic addressed for said first IP address to said VPN application and a selected second number of edge routers direct VPN traffic addressed for said **second** IP address to said

black-hole router (column 9, lines 5-12; wherein the routes when received can still forward traffic to the victim which includes the first address as well to the egress edge router which encompasses the second address)

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to modify Talpade et al. with Stone et al. to use a tracking router to inject a static route of the packets going to the victim while still allowing the victim to receive packets . The rationale behind this modification is to divert traffic using the static route so as to migitate a DDoS attack.

As to **claim 3**, Talpade et al. does not disclose the ISP VPN network wherein said black-hole router injects said second IP address in response to a Distributed Denial of Service (DDoS) attack on said VPN application.
Stone et al. does discloses the ISP network wherein said black-hole router (tracking router) injects said second IP address (static route) in response to a Distributed Denial of Service (DDOS) attack on said VPN application. (column 8,line 65-column 9, line 12)

As to **claim 5**, Talpade et al. does not disclose to propagate the injected second IP address to said edge routers.
discloses the ISP network, wherein said ISP network utilizes dynamic routing protocols in combination with community-based route filtering to propagate the injected second IP address to said edge routers.

Stone et al. does discloses the ISP network, wherein said ISP network utilizes dynamic routing protocols (column 8, lines 45-64; BGP, IBGP) in combination with community-based route filtering (column 8, lines 42-45; tracking routers utilize BGP announce routes to the edge routers) to propagate the injected second IP address to said edge routers.

As to **claim 6**, Talpade et al.-Stone et al. discloses the ISP network, wherein said second number of edge routers directs VPN traffic, addressed for said first IP address, to said black hole router(filter router), said black hole router is adapted to

receive such traffic as black-holed-traffic (DDoS traffic)(Talpade et al., [0032]), said black-hole router adapted to analyze said black-holed traffic in order to determine a ratio of attack traffic to legitimate traffic.(Talpade et al, [0033], where filter router examines traffic and removes the DDoS traffic after checking to see if it is legitimate traffic.)

As to **claim 7**, Talpade et al.- Stone et al. discloses the ISP network where the network comprises of at least one route reflector ("traffic filter" which is a part of the "filter router") each one of said route reflectors being connected to a different set of edge routers from said plurality of edge routers, said route reflectors being adapted to update said edge routers with route instructions, such route instructions including said injected second address. (Talpade et al., [0017], "filter router" advertises this updated routing information to each border router and edge router)

As to **claims 8 and 11**, these are methods corresponding to the method in claim 1. Therefore it has been analyzed and rejected based upon system in claim 1.

As to **claim 12**, Talpade et al.-Stone et al. discloses the method wherein said injected instruction (routing information) is a Border Gateway Protocol (BGP) routing instruction. (Talpade et al, [0037])

As to **claim 13**, this is a method corresponding to system in claim 6. Therefore it has been analyzed and rejected based upon system in claim 6.

As to **claim 14**, this is a method corresponding to system in claim 7. Therefore it has been analyzed and rejected based upon system in claim 7.

As to **claims 15**, this is a method corresponding to the method in claim 1. Therefore it has been analyzed and rejected based upon system in claim 1.

As to **claim 17**, this is a method corresponding to system in claim 6. Therefore it has been analyzed and rejected based upon system in claim 6.

As to **claim 19**, this is a method corresponding to system in claim 7. Therefore it has been analyzed and rejected based upon system in claim 7.

5. **Claims 4 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Talpade et al. (U.S. Patent Pub. No. 2004/0148520 AI) in view of Stone et al. (U.S. Patent No. 7,062,782 B1) in further view of Afek et al.(U.S. Patent Pub. No. 2002/0083175)

As to **claim 4**, Talpade et al.-Stone et al. does not disclose the ISP network wherein said community value can be changed in real-time by said black-hole router.

Afek et al. does discloses the ISP network wherein said community value(routing information) can be changed in real-time by said black-hole router (guard machines). ([0261)], where the guard decide when the attack has ended and reverse the settings previously performed)

As to **claim 18**, this is a method corresponding to system in claim 4. Therefore it has been analyzed and rejected based upon system in claim 4.

6. **Claims 2, 10, and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Talpade et al. (U.S. Patent Pub. No. 2004/0148520 AI) in view of Stone et al. (U.S. Patent No. 7,062,782 B1) in further view of Yamauchi (U.S. Patent Pub. No. 2002/0037010 AI)

As to **claim 2**, Talpade as modified does not disclose a ISP system that is a Multiprotocol Label Switching Virtual Private Network (MLS VPN).

Yamauchi does disclose a virtual private network that uses the Multiprotocol Label Switching. (abstract)

At the time of the invention, it would have been obvious to a person of ordinary skilled in the art to modify Talpade et al. with Yamauchi to use the Multiprotocol Label switching in a VPN network which is a similar to the network used in the network taught by Talapade et al. The rationale behind this modification is that a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art.

As to **claim 10**, this is a method corresponding to the method in claim 2. Therefore it has been analyzed and rejected based upon system in claim 2.

As to **claim 16**, this is a method corresponding to the method in claim 2. Therefore it has been analyzed and rejected based upon system in claim 2.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOE CHACKO whose telephone number is (571)270-3318. The examiner can normally be reached on Monday-Friday 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. C./
Examiner, Art Unit 2456

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2456